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Man.

Age of the mother, and sex of the child.—According to Schramm and Bidder, it appears that we may consider twenty to be the age of the most perfect female maturity; that it is at that age that women bear the largest proportion of girls; that, the farther they pass beyond that age, the more the proportion of the male to the female children increases. Rumpe deals with this question, especially as regards primiparae. He divides his cases into those where the mother was under thirty (young), and those over (old). For the old primiparae, Rumpe had 63 boys against 52 girls, or 121 : 100.

Other authors have found as follows, for old primiparae:—

	Boys.	Girls.
Schramm	132	100
Abifeld	137	100
Hecker	133	100
Krüger and Winckel	133	100

The mean proportion of all births, independent of the mother's condition, is 106 boys to 100 girls. If this increase in the relative number of boys depends on the age of the mother, then it must be the case also with multiparae. Rumpe cites 400 cases to show that it is so: 200 multiparae under thirty gave birth to 96 boys and 104 girls; i.e., 92 : 100; 200 multiparae over thirty gave birth to 110 boys and 90 girls; i.e., 122 : 100. The conclusion is therefore confirmed, that, the older the mothers, the larger the proportion of boys born. —(*Arch. f. gynoek.*, xx., 1882, 129.) C. S. M. [166]

Asymmetry of the turbinate bones in man.—According to Dr. H. Allen, this may exist independently of or involving the nasal septum, and is probably due to pre-natal influences. —(*Proc. acad. nat. sc. Philad.*, 1882, 239.) F. W. T. [167]

PEDAGOGY.

The use of slates.—Prof. H. Cohn of Breslau believes that the use of slates by school-children tends to produce short-sightedness; and would substitute either pen and ink, or an artificial white slate with black pencil manufactured in Pilsen, and already introduced into a few German schools. In 1878 Horner found (*Vierteljahrsschrift öffentl. gesundheitspflege*, x. 4), that B and E could be read, if black on white ground, 496 cm.; if white on black, 421 cm.; and if gray on black, 330 cm.; and ascribed the greater difficulty with white letters to irradiation. The reflection of light from the surface of slates is, it is said, enough alone to cause their disuse. The school-board of Zürich has forbidden the use of the slate after the first term (primary year), and many teachers and oculists advocate the substitution of white-boards for black-boards. The noise of slates; dirty habits formed by erasures; bad positions favored by reading the less legible script; a heavy hand; and the habit of twisting learned with a pencil, and to be

unlearned with a pen,—these, it is said, are obviated by the use of pen and ink at the outset. The obvious objections are, that children can occupy themselves better with slates, and from pencil to pen is from the easier to the harder. —G. S. H. [168]

Curriculum in Prussian gymnasia.—The most important changes in the recent revision of the study-plans of the Prussian gymnasia, which had remained essentially unaltered between 1856 and 1882, are as follows: 1. One hour per week less of Latin during the first five, and two less during the secunda years. Greek begins one year later, but for four years gains an hour per week. Writing and religion receive also less time. 2. What is thus gained is divided nearly equally between French, history and geography, mathematics, physics and natural science, and drawing. Save in the reduction of Latin, the change is slight, but significant, and much discussed, as a departure towards the plan of the real-school. —G. S. H. [169]

School savings-banks.—The advisability of school savings-banks elicits much discussion in Germany. On the one hand, it is claimed that pupils may be taught self-denial, foresight, interest in great mercantile and other operations remote from their own narrow lives; encouraged in bookkeeping; saved from the noxious effects of bad confectionery; if poor, encouraged in helping their parents; and ideality and healthful moral sentiments cultivated by directing their plans for future use of their money to beneficent objects. On the other hand, the opponents of school-banks urge, that they encourage a commercial view of life prematurely; that, as school-children seldom earn money, they will be stimulated to tease or steal it from their parents or others, when, to be properly possessed, money should be earned; and that this is not the most pedagogic method of instruction. The plan has perhaps been most fully tried in Ghent, where, out of 15,392 scholars in the lower schools, 13,032 have accounts in the school savings-banks of the place; the average for each depositor being about 35 francs (seven dollars). —G. S. H. [170]

Herbart's works.—The first volume of a new edition of Herbart's works, just published by Veit & Co., contains his pedagogical writings. As Herbart was the first to attempt to give a scientific character to pedagogy, and a more or less philosophical one to Pestalozzi's incoherent insights, his historic significance is great; although advance has been made beyond his position by his followers in pedagogy (Beneke, Diesterweg), as well as by his philosophical disciples. A number of critiques and other interesting *inedita*, the existence of which seems to have been unknown to the compilers of the former Hartenstein edition, add considerably to the value of the new edition. —G. S. H. [171]

INTELLIGENCE FROM AMERICAN SCIENTIFIC STATIONS.

GOVERNMENT ORGANIZATIONS.

National museum.

The fisheries exhibition.—Mr. T. W. Smillie, photographer of the museum, is preparing a series of photographs to accompany the fisheries exhibit, which will be sent to London in the spring. The views, many of which are those of fishing-vessels and boats in motion, were taken by an instantaneous process.

The positives, which measure 30 × 40 inches, and are, perhaps, the largest photographs ever taken for display without crayoning, are obtained by aid of the electric light. The rays from a Brush lamp are passed through an achromatic condenser 13½ inches in diameter, thence through a negative and through a large portrait-lens; they are then thrown upon a screen placed at a distance of 7 or 8 feet from the camera. A sensitized sheet of paper, of dimensions a little

exceeding those given above, is hung on the screen, and exposed for 15 or 20 minutes. The picture is developed by pyrogallic acid, and fixed by hyposulphite of soda.

Lighting the museum. — Experiments are being made with a view to lighting the museum building by electricity.

The ceramic collection. — A magnificent Sèvres vase 3½ feet in height was recently given by Mr. Lazarus Strauss of New York. It is one of the finest products of the Sèvres pottery, and was valued in France at 6,000 francs.

Thin sections of anthracite coal. — Mr. G. P. Merrill, of the department of rocks, who spent some time in the attempt to prepare transparent sections of anthracite coal for the microscope, has abandoned the enterprise as being outside the limits of possibility. So far as his experience goes, the sections offered by dealers are of imperfectly carbonized wood-nodules and other similar substances.

Naval observatory.

Ephemeris of the great comet, b. 1882. — Computed from elements (*Nature*, 688), and reduced to the mean equinox, 1883.0.

GREENWICH MEAN NOON.					
	R. A.	Declination.	Log. r.	Log. Δ.	
1883.	h. m. s.	° ' "			
Feb. 10.0	6 0 37.8	19 41 17	0.48137	0.38891	
14.0	5 57 40.4	18 40 13	0.48909	0.40520	
18.0	5 55 19.7	17 41 17	0.49669	0.42132	
22.0	5 53 32.7	16 44 35	0.50413	0.43723	
26.0	5 52 14.7	15 50 14	0.51133	0.45282	
March 2.0	5 51 24.4	14 58 16	0.51841	0.46817	
6.0	5 50 58.7	14 8 43	0.52532	0.48322	
10.0	5 50 54.8	13 21 37	0.53200	0.49790	
14.0	5 51 12.3	12 37 0	0.53861	0.51231	
18.0	5 51 47.9	11 54 52	0.54508	0.52635	
22.0	5 52 39.5	11 15 10	0.55135	0.53995	
26.0	5 53 46.1	10 37 56	0.55751	0.55316	
30.0	5 55 6.1	10 3 6	0.56354	0.56594	
April 3.0	5 56 38.1	9 30 34	0.56944	0.57828	
7.0	5 58 20.9	9 0 19	0.57520	0.59015	
11.0	6 0 18.9	8 32 21	0.58090	0.60158	

E. FRISBY, *Prof. Math., U.S.N.*

Washington, Feb. 10, 1883.

Note. — In the published elements, ϕ should be $89^\circ 13' 42''$.70, instead of $89^\circ 7' 42''$.70.

(Communicated by Vice-Admiral Rowan, Supt. U. S. naval observatory.)

Department of agriculture.

Anthrax or charbon. — In December last Mr. Charles J. Whitmore of Boston addressed a letter to the commissioner, stating that the Vicomte de Coettogan had obtained the concession of the use of the Pasteur method of vaccination for America, and desired to ascertain: 1^o, whether charbon-fever exists in the United States; 2^o, whether Pasteur's method could be introduced here with vaccine from Pasteur's laboratory; and, 3^o, whether such introduction would prove profitable to the introducer.

The commissioner referred the letter to Dr. D. E. Salmon of the veterinary corps of the department, who reports as follows: —

1. In the northern and western states, charbon-

fever occasionally occurs on isolated farms among cattle; but it is not known that sheep are very often affected. The same is true of many of the southern states; but in the gulf states, and especially in the lower Mississippi valley, charbon at times becomes extremely destructive to all kinds of domestic animals, especially after great inundations. Heavy losses in stock experienced in certain years in Tennessee, Arkansas, Missouri, etc., may or may not have been caused by charbon; no competent investigation having been made.

2. This question is not so easily answered, as it involves, first, the bringing the vaccine from France, and keeping it here until needed; secondly, the determination of the strength which should be originally given it to make it safe for our animals; thirdly, public experiments to convince our farmers of the usefulness of the vaccination.

Pasteur's method requires the use of two vaccines of different strengths, which cannot be kept stable for any length of time; the weaker vaccine becoming ineffective, while the stronger virus frequently produces fatal results. This has been proven by experiments in different parts of France, in Germany, and England, made partly by Pasteur's assistants. Moreover, Pasteur himself admits that the animals of different countries are of various degrees of susceptibility, and that he had to vary the strength of his vaccine to suit the constitution of the animals. To determine the comparative susceptibility of American animals, would alone be a work of considerable magnitude and expense, requiring at different points a number of such public experiments as were made in France.

3. The introduction of the method by private persons with any idea of profit would therefore probably be doomed to failure; but as the preparation of the charbon vaccine is no secret, the establishment by the general government of a laboratory for the preparation and free distribution of the vaccines for charbon and other contagious diseases of animals would seem to be desirable.

PUBLIC AND PRIVATE INSTITUTIONS.

Boston society of natural history.

Teachers' school of science. — This department of the society has become well known to Boston people by its efforts for the education of teachers since its inception in 1871. During some winters several courses of lessons have been given to large audiences, which were accompanied by other laboratory series with smaller audiences, on subjects ranging throughout the physical and natural-history branches of knowledge.

The present winter's work consists of only two courses: one of ten lessons on physical geography, by Prof. W. H. Niles; and one of five on physiology, by Dr. H. P. Bowditch.

Prof. Niles's course has been eminently practical, and is much praised by the teachers in attendance; who say that he gives them trustworthy and original views, and modes of treating the subject, which they can use in their school-work. Dr. Bowditch will probably carry out the same plan as last year, in which he was equally successful in showing teachers how to use the bodies of their own pupils in such simple physiological experimentation as is needed in the public schools.

The larger public courses have been for two years under the patronage of the Lowell fund, of which Mr. Augustus Lowell is trustee; and his liberality in allowing the use of Huntington Hall on Saturdays has enabled the curator of the Society, Prof. Alpheus Hyatt, to re-organize the management, and extend

the benefits of the lessons to all towns near Boston. The school now has agents interested in the proper distribution and use of its tickets, not only in Boston, but also in the larger number of the suburban towns which cluster around that municipality.

The following statistics of this winter's courses will speak for themselves with regard to the probable benefits of this extension of its efforts over a wider field:—

Subjects.	Applications received.	Tickets sent
Physical geography	988	1,098
Physiology	834	945
	1,822	2,043
Distribution of Tickets.	Phys. geog.	Physiol.
Boston	364	302
Neighboring towns (45)	589	512
Complimentary, school authorities and private persons	145	131
	1,098	945

Grade of teachers: Superintendents, 10; sub-masters, 24; principals, 157; assistants, 847. The average attendance so far upon the first course has been from six to seven hundred.

The school has also had another branch in active operation, in which the courses are paid for by the teachers themselves. The curator, assisted by Mr. Van Vleck, has had two classes in zoölogy occupying four winters, and numbering in all fifty-nine teachers; Mr. B. H. Van Vleck, a class in physiology numbering fifteen teachers; and Mr. W. O. Crosby, a special class in geology. These classes have demonstrated a demand for the kind of knowledge offered, so earnest that a good proportion of the teachers have been willing to surrender their holidays to laboratory work, and also to pay for the privilege. A number more would have attended but for the obstacle of the fee necessarily charged for tuition. These classes, now that the reality of this demand has been shown, should be placed on a more liberal basis, and one more consistent with the usual policy of the society with regard to the needs of our public schools. Owing to a combination of causes which it would be useless to detail, these laboratory courses formerly given every Saturday throughout the winter have been discontinued during this season. It is intended to resume them as soon as practicable.

Academy of natural sciences, Philadelphia, Penn.

Instruction in mineralogy and lithology.—At the close of Prof. Heilprin's lectures, Prof. H. Carville Lewis will deliver a course of instruction in mineralogy and lithology, a large portion of which will consist of a series of field-lectures upon the mineralogy and lithology of Philadelphia and vicinity. In addition to lectures at the academy, and alternating with them, there will be about ten short excursions to interesting localities in the neighborhood of the city, where the strata and their enclosed minerals will be studied in place, and practical methods given for recognizing both rocks and minerals and their relation to the geology of the region. The specimens collected in the field will be more carefully examined and studied with laboratory practice at the academy at the lecture following each excursion.

The introductory lecture will be delivered on Tuesday, April 17, 1883, in the lecture-room of the academy, at 4.15 P.M.; and the lectures will continue at the same hour on successive Tuesdays and Fridays. The field-lectures, commencing early in May and

continuing until July, will take place on Fridays (weather permitting), and will occupy the greater part of the day.

Among the localities visited will be the quarries of hornblendic gneiss at Germantown and Frankford, the soapstone quarries on the Schuylkill, the limestone and marble quarries, and the iron-mines of the Montgomery County Valley, the lead, zinc, and copper mines near Phoenixville, the mineral localities of Delaware County, etc.

NOTES AND NEWS.

—The description of the fossil remains of the remarkable flying reptile, *Rhamphorhynchus phyllurus* Marsh, which was given in the American journal of science in April, 1882, has been supplemented by the liberal distribution of casts of the original by Prof. O. C. Marsh. These are faithful representations in all the more important characteristics prominent enough to make their re-appearance upon a plaster casting. The wings and caudal paddle are the most important features, and render this fossil unique of its kind. The wings are particularly well rendered, and perfectly distinct in outline and details. The steering-paddle at the end of the long, attenuated tail, and the tail itself, is distinct in outline, but deficient in details; the bones of the hands are also in the same state, all these parts being very small.

Professor Marsh, in distributing these and other casts of his rare and remarkable fossils, has added very greatly to the usefulness of his own work and the diffusion of knowledge, besides setting a shining example of scientific liberality. He has, we know, in several instances, and we presume in all cases, demanded no exchange of any kind. Many institutions now have the means of placing before visitors and students the actual condition of the fossil remains of one of the most remarkable of the extinct Jurassic reptiles. This is so nearly perfect that it shows there is no exaggeration in the restoration accompanying Professor Marsh's descriptions, which represents this pterodactyle flying through the air with its wings expanded.

—The following persons were elected officers of the biological society of Washington, on Jan. 5: President, Prof. C. A. White; Vice-Presidents, Prof. C. V. Riley, Prof. Lester G. Ward, Mr. William H. Dall, Prof. Theodore Gill; Secretaries, Mr. G. Brown Goode, Mr. Richard Rathbun; Treasurer, Dr. Tarleton H. Bean; Members of Council, Dr. George Vasey, Dr. D. Webster Prentiss, Prof. Otis T. Mason, Mr. Frederick W. True, Dr. Elliott Coues.

—At the meeting of the Albany institute held Jan. 16, officers of the institute at large and of its three departments were chosen for the ensuing year. The following, by virtue of their offices, constitute the executive committee provided for by a recently adopted by-law: President, Orlando Meads, LL.D.; Treasurer, John Templeton; Recording secretary and libra-